Stoller
Grand Junction Office established 1959

50-06-18
Log Data Report

Borehole Information:

Borehole: 50-06-18 (299-W10-196)			**Site:** T Tank Farm		
Coordinates (Hanford)		**GWL (ft)[1]:** N/A[2]		**GWL Date:** N/A	
North	**East**	**Drill Date**	**TOC[3] Elevation**	**Total Depth (ft)**	**Type**
43517	-75802	Apr 1993	673.51 ft	179.6	Cable Tool

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Schedule 40	0.6	10.75	10	0.365	+0.6	73
Schedule 40	1.1	8.625	8	0.322	+1.1	114
Schedule 40	1.7	6 5/8	6	0.280	+1.7	176

Dimensions for 10-in. and 8-in. casings are published values for ASTM schedule-40 steel pipe. The logging engineer measured the 6-in. casing stick up using a steel tape. A caliper was used to determine the 6-in. outside casing diameter. Casing thickness values are based on published values for ASTM schedule-40 steel pipe.

Borehole Notes:

The borehole coordinates, elevation, and borehole depth information listed above are from *Hanford Wells* (Chamness and Merz 1993). The logging engineer measured depth to water and depth to bottom using an e-tape before logging. Depth to bottom was 177.7 ft. The borehole was dry. Zero reference = top of 6-in. casing. Top of casing is cut mostly even. A reference point survey "X" is located on TOC stickup.

Logging Equipment Information:

Logging System:	Gamma 2F (NMLS)		**Type:** Neutron moisture gauge
Calibration Date:	11/2001	**Calibration Reference:**	GJO-2002-291-TAR
		Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	1	2	3	4	5
Date	10/15/02	10/15/02			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	176.25	125.25			
Finish Depth (ft)	109.75	115			
Count Time (sec)	N/A	N/A			
Live/Real	R	R			
Shield (Y/N)	N/A	N/A			
MSA Interval (ft)	0.25	0.25			
ft/min	1 ft/min	1 ft/min			
Pre-Verification	BF012CAB	BF012CAB			
Start File	BF012000	BF012267			
Finish File	BF012265	BF012308			

Log Run	1	2	3	4	5
Post-Verification	BF012CAA	BF012CAA			
Depth Return Error (in.)	N/A	+1			
Comments	No fine-gain adjustment.	Repeat section.			

Logging Operation Notes:

Data were collected using Gamma 2, HO 68B-3572. The logging vehicle was set up facing southeast. A centralizer was installed on the sonde. NMLS pre-run and post-run verification spectra were collected at the beginning and end of each day. The depth interval from ground surface to 109.75 ft was not logged because of the presence of multiple casing strings and annular grout.

Preliminary gross count plots were prepared in the field.

Analysis Notes:

Analyst:	McCain	Date:	10/22/02	Reference:	GJO-HGLP 1.6.3, Rev. 0

NMLS spectra were processed in batch mode using APTEC Supervisor to generate files of gross counts as a function of spectrum file name and depth. An EXCEL spreadsheet was used to prepare preliminary gross count plots and to calculate and plot gross count rates. Gross count rates for the verification spectra were within acceptance criteria. Because this log is part of a group of four boreholes with differing casing configurations, no attempt was made to calculate moisture content. The log plots are qualitative; the primary use is correlation. In general, increasing neutron count rates are indicative of increasing moisture content.

Log Plot Notes:

NMLS gross count rates are plotted as a function of depth, using EXCEL's graphing capabilities. Logs are plotted at a consistent depth and count rate scale to facilitate comparison and correlation.

Results and Interpretations:

Elevated neutron count rates occurred between 115 and 141 ft. Based on the geologic log, this corresponds roughly with the depth of the upper Ringold.

References:

Chamness, M.A., and J.K. Merz, 1993. *Hanford Wells*, PNL-8800, prepared by Pacific Northwest Laboratory for the U.S. Department of Energy, Richland, Washington.

U.S. Department of Energy, 1999. *Hanford Tank Farms Vadose Zone, Tank Summary Data Report for Tank T-106*, GJ-HAN-120, prepared by MACTEC-ERS for the Grand Junction Office, Grand Junction, Colorado, June.

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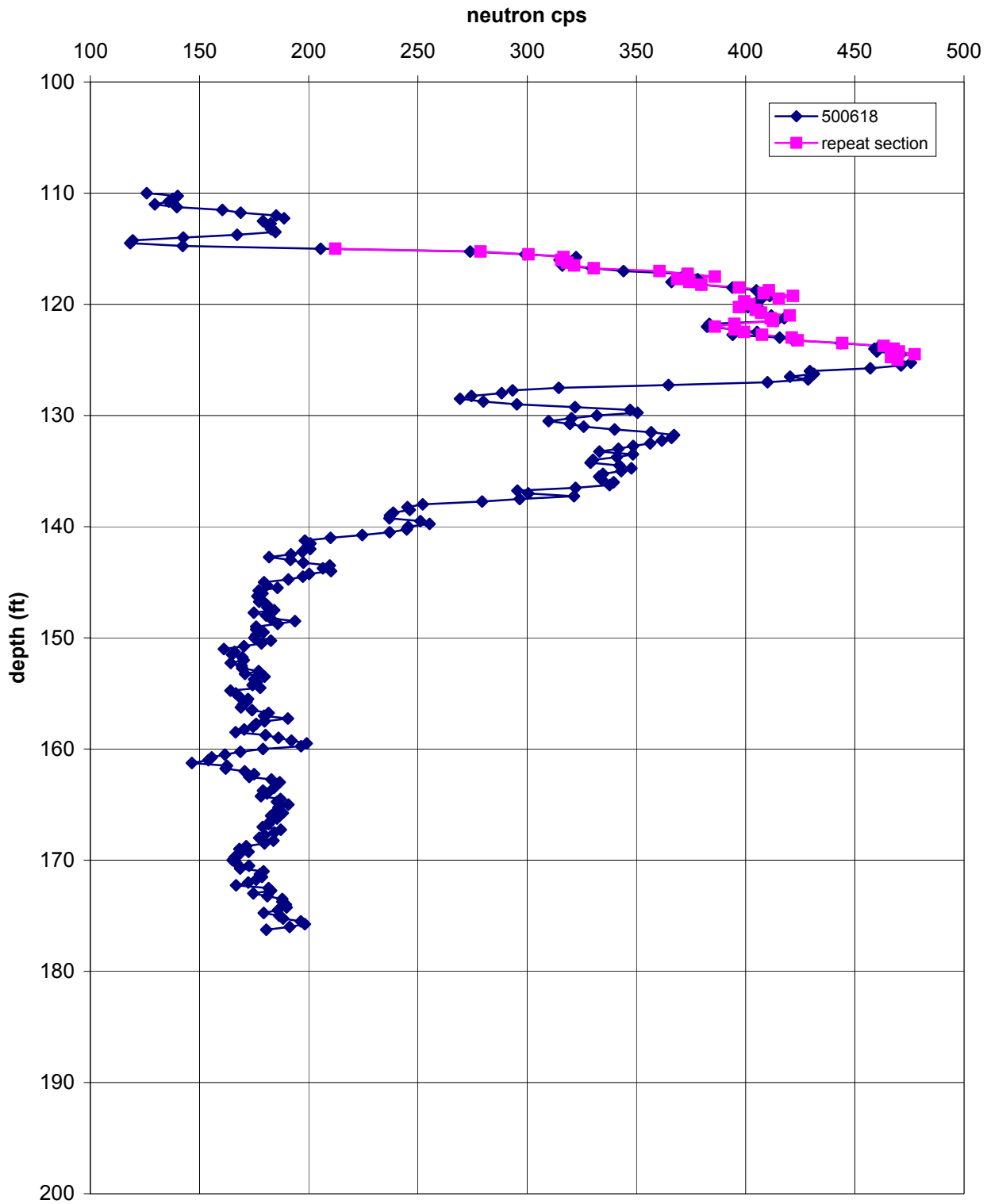
[1] GWL – groundwater depth
[2] N/A – not applicable
[3] TOC – top of casing

50-06-18


neutron cps
100
150
200
250
300
350
400
450
500
depth (ft)
100
110
120
130
140
150
160
170
180
190
200
500618
repeat section